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~~32~~. The method of claim ¹~~30~~ wherein the concentration of the mineral gluconate salt and the amino acid is from about 0.1M to about 0.2M.

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~~33~~. The method of claim ¹~~30~~ wherein the mineral gluconate salt is zinc gluconate.

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~~34~~. The method of claim ⁴~~33~~ wherein the amino acid is a basic amino acid selected from the group consisting of lysine, arginine, histidine and mixtures thereof.

⁶
~~35~~. A method of inhibiting generation or maturation of sperm in a testis or epididymis of a male animal comprising applying in said testis or epididymis an aqueous solution of zinc gluconate and an amino acid capable of forming the solution, said aqueous solution neutralized to a pH in the range of 6.0 to 7.5 and applied in an amount effective to inhibit generation or maturation of sperm in the testis or epididymis and said zinc gluconate and said amino acid being present in substantially equal molar amounts at a concentration in the range from about 0.05M to about 2.0M.

Q' cont

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~~36~~. The method of claim ⁶~~35~~ wherein the concentration of the zinc gluconate and the amino acid is from about 0.05M to about 0.3M.

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~~37~~. The method of claim ⁶~~35~~ wherein the concentration of the zinc gluconate and the amino acid is from about 0.1M to about 0.2M.

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~~38~~. The method of claim ⁶~~35~~ wherein the amino acid is a basic amino acid selected from the group consisting of lysine, arginine, histidine and mixtures thereof.

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~~39.~~ The method of claim ⁹~~38~~ wherein the basic amino acid is arginine.

¹¹
~~40.~~ A method of inhibiting motility or viability of sperm in a vagina, cervix, uterus or fallopian tube of a female animal comprising applying in said vagina, cervix, uterus or fallopian tube an aqueous solution of a mineral gluconate salt and an amino acid capable of forming the solution, said aqueous solution neutralized to a pH in the range 6.0 to 7.5 and applied in an amount effective to inhibit motility or viability of sperm in said vagina, cervix, uterus or fallopian tube and said mineral gluconate salt and said amino acid being present in substantially equal molar amounts at a concentration in the range from about 0.05M to about 2.0M.

C' cont

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~~41.~~ The method of claim ¹¹~~40~~ wherein the concentration of the mineral gluconate salt and the amino acid is from about 0.05M to about 0.3M.

¹³
~~42.~~ The method of claim ¹¹~~40~~ wherein the concentration of the mineral gluconate salt and the amino acid is from about 0.1M to about 0.2M.

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~~43.~~ The method of claim ¹¹~~40~~ wherein the mineral gluconate salt is zinc gluconate.

¹⁵
~~44.~~ The method of claim ¹⁴~~43~~ wherein the amino acid is a basic amino acid selected from the group consisting of lysine, arginine, histidine and mixtures thereof.

Remarks

The Invention

Zinc and calcium salts are known to have an effect on the generation, maturation, motility or viability of sperm. Most of the work with zinc and calcium salts has been in vitro.

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